

Activity: **7.8**
Generate Operating Documentation

Responsibility: Project Team/Technical Writer

Description: Plan, organize, and write the operating documentation that describes the functions and features of the software product from the users point-of-view. The different ways that users (including system administration and maintenance personnel) will interact with the software product must be considered. The needs of the users should dictate the document presentation style and level of detail. Responsibilities for changing and maintaining the documents should be described in each document.

The following are typical operating documents for a large software project.

- Users Manual
- Programmers Reference Manual
- Systems Administration Manual
- Data Base Administration Manual
- Operations Manual

It is recommended that a technical writer be involved in the generation of all operating documents. A technical writer works closely with the project team to ensure that documents are grammatically correct; comply with applicable standards; and are consistent, readable, and logical.

Note: The operating documents can be produced as separate manuals or combined to accommodate less complex software projects.

Procedure: Use the following procedure to develop the operating documentation.

- Identify the operating documents that need to be developed. Determine if any of the documents can be combined or delivered as multiple volumes.
- Determine whether the documents should be provided as printed material, standalone electronic files, online documentation accessed through the software product, or a combination.
- Determine the best presentation method or combination of methods required for each of the documents, such as a traditional manual, quick reference guide or card, or online help.

***Procedure,
continued:***

- Identify all of the features of the software user interface and the tasks users will perform.
- Identify the users' needs and experience levels to determine:
 - The amount of user interaction, level of interaction, and whether the interaction is direct or indirect.
 - The appropriate level of detail (e.g., the Users Manual should not contain highly technical terms and explanations that may confuse or frustrate a user).
- Determine the document content and organization based on whether the document will be used more as an instructional tool or a reference guide.
- Develop descriptions of each function and feature of the software product and organize the information to facilitate quick, random access.
- Provide appropriate illustrations and examples to enhance clarity and understanding.
- Establish a schedule for the documents to be reviewed after the software product goes into production. Operating documents must be kept up-to-date as long as the software product remains in production.

Tasks:

The following tasks describe the minimum requirements for operating documentation.

7.8.1 Produce Users Manual

7.8.2 Produce Programmers Reference Manual

Task: **7.8.1**
Produce Users Manual

Responsibility: Project Team/Technical Writer

Description: The Users Manual provides detailed information users need to access, navigate through, and operate the software product. Users rely on the Users Manual to learn about the software or to refresh their memory about specific functions. A Users Manual that is organized functionally so that the information is presented the same way the software product works helps users understand the flow of menus and options to reach the desired functions.

Different categories of users may require different types of information. A modular approach to developing the Users Manual to accommodate the needs of different types of users eliminates duplication and minimizes the potential for error or omission during an amendment or update. For example, separate general information that applies to all users from the special information that applies to selected users such as system administrators or data base administrators. The special information can be presented in appendixes or supplements that are only provided to the users who need the information.

Work Product: Write the draft Users Manual in clear, nontechnical terminology that is oriented to the experience levels and needs of the user(s). The following are typical features of a users manual.

- Overview information on the history and background of the project and the architecture, operating environment, and current version or release of the software product.
- Instructions for how to install, setup, or access the software product.
- Complete coverage of all software functions, presented in a logical, hierarchical order.
- Accurate pictures of screens and reports, ideally with data values shown, so the user can easily relate to examples.
- In-depth examples and explanations of the areas of the software product that are most difficult to understand.
- Clear delineation of which features are accessible only to specific users.
- Instructions on accessing and using online help features.

**Work Product,
continued:**

- Procedures for data entry.
- Descriptions of error conditions, explanations of error messages, and instructions for correcting problems and returning to the function being performed when the error occurred.
- Instructions for performing queries and generating reports.
- Who to contact for help or further information.

Note:

For large or complex software products, separate manuals (e.g., User's Manual, Data Base Administrator's Manual, and System Administrator's Manual) may be necessary to address the needs of different categories of users.

For very small projects, a quick reference guide or card may be more appropriate than a full-scale Users Manual. The guide or card should be designed to provide a quick reference of logon, logoff, and commands for frequently used functions.

For projects of any size, a quick reference card may be developed as a supplement to more detailed user documentation.

Review Process:

Conduct structured walkthroughs for the draft Users Manual or set of user documents to assure that the documentation is complete, easy to use, and accurately reflects the software product and its functions.

The draft user documentation will be tested and verified with the software product during the Software Integration and Testing Stage.

Task:	7.8.2 Produce Programmers Reference Manual
Responsibility:	Project Team/Technical Writer
Description:	<p>The Programmers Reference Manual contains programming information used by the maintenance staff to maintain the programs, data bases, interfaces, and operating environment. The Programmers Reference Manual should provide an overall conceptual understanding of how the software product is constructed and the details necessary to implement corrections, changes, or enhancements.</p> <p>The Programmers Reference Manual describes the logic used in developing the software product and the functional and system flow to help the maintenance programmers understand how the programs fit together. The information should enable a programmer to determine which programs may need to be modified to change a system function or to fix an error.</p>
Work Product:	<p>The following are typical features of a Programmers Reference Manual.</p> <ul style="list-style-type: none">• A description of the technical environment, including versions of the programming language(s) and other proprietary software packages.• A brief description of the design features including descriptions of unusual conditions and constraints.• An overview of the software architecture, program structure, and program calling hierarchy.• The design and programming standards and techniques used to develop the software product.• Concise descriptions of the purpose and approach used for each program.• Layouts for all data structures and files used in the software product.• Descriptions of maintenance procedures, including configuration management, program checkout, and system build routines.• The instructions necessary to compile, link, edit, and execute all programs.

**Work Product,
continued:**

- Manual and automated backup procedures.
- Error processing features.

Use appendixes to provide detailed information that is likely to change as the software product is maintained. For example, a list of program names and a synopsis of each program could be included as an appendix.

Review Process:

Conduct structured walkthroughs of the draft Programmers Reference Manual to assure that the documentation is complete, easy to use, and accurately reflects the software product and its functions.

The draft Programmers Reference Manual will be tested and verified with the software product during the Software Integration and Testing Stage.